

#19/Response  
3/6/01  
PATENT  
J. Butler

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In the Application of:**  
Loretta Ann Grezzo Page  
Kathryn Amy Pearlstine  
Waifong L. Anton



**CASE NO.:** IJ-0005

**SERIAL NO.:** 09/120,608

**GROUP ART UNIT:** 1714

**FILED:** JULY 22, 1998

**EXAMINER:** C. SHOSHO

**FOR: Water Insoluble Non-Ionic Graft Copolymers**

**AMENDMENT**

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

This is in response to the Office Action mailed November 21, 2000 having a period for reply which expired on February 21, 2001. A Petition for Extension of Time of one month, up to and including March 21, 2001 is being submitted so that the present response may be considered as timely filed.

**REMARKS**

The claims are 6-12. No amendments are made and no new matter is added. Initially, Applicants and their counsel would like to express their thanks for the courtesy and hospitality extended at the interview with the Examiner on February 13, 2001.

**Rejections Under 35 USC §103(a)**

Claims 6-12 stand rejected under 35 USC §103(a) as unpatentable over Ma et al., EP 0 851 014 ("Ma '014") in view of Ma et al., 5 085 698 ("Ma '698"). The rejection is respectfully traversed.

As discussed at the interview, Ma '014 teaches inks containing hydrosol polymers. These polymers are dispersed in the inks as polymer particles, preferably as self-stabilizing polymer particles. This is made apparent by the following passages in Ma '014:

- ◆ Page 4, lines 11-12 where Ma states that the hydrosols are "dispersed as a separate phase in the aqueous medium";
- ◆ Page 5, lines 13-16, where Ma '014 discusses the size of the hydrosol particles as a function of their relative hydrophobicity; and
- ◆ The examples, which disclose an inversion step as part of the polymer synthesis and also discuss particle size for the hydrosol polymers.

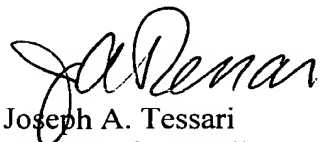
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In contrast to these teachings, the present invention claims an ink in which the graft copolymer additive is soluble in the ink vehicle. Because the additive is soluble, the polymer additive of this invention are present in the inks in a dissolved state, not in a particulate state as in Ma '014. Thus, the polymers of this invention are soluble in the ink whereas the polymers of Ma '014 are not soluble in the ink.

The Office has pointed to the disclosure at page 4, lines 26-29 as suggesting that the hydrosol polymers of Ma '014 can have a degree of solubility in the ink, so long as they are not completely soluble. As explained during the interview, the polymers of Ma are not soluble in the ink, but rather are present in the inks as particles. It is true that Ma '014 teaches that the hydrosols can contain hydrophilic monomers. However, those monomers are present to render the hydrosol particle self-stabilizing in the ink. The concept is much the same as a dispersant or surfactant will stabilize and insoluble particle in a colloidal suspension, except that the hydrosol is designed to be self-stabilizing so as to avoid the need for a separate dispersant or surfactant. This is supported by the disclosure at page 5, lines 13-16. There, Ma '014 teaches that hydrophilic hydrosols swell in the ink whereas hydrophobic hydrosols produce smaller polymer particles. The Office will appreciate that Ma '014 does not even suggest that the hydrophilic hydrosols dissolve in the ink. Indeed, it is well known in the ink jet art that particulate materials in the ink should be kept as small as possible to promote ink stability through Brownian motion. Thus, a skilled artisan would, based on the teachings of Ma '014, be motivated to use hydrophobic hydrosols.

The Office has also expressed some confusion regarding the Declaration of Kathryn Pearlstine. Applicants regret any lack of clarity in expressing their position and regret any confusion or misunderstanding caused by the Declaration. With respect to Applicant's admission, it is true that the world of polymers that can be prepared under the teachings of Ma '014 overlaps with the world of polymers taught in the present application. It was in that sense that Applicants admitted that the polymers of Ma '014 **can be** identical to the polymers used in the present inks. Applicants attempted in the Declaration to show the difference between the polymers of Ma '014 and those of the present invention by showing that they had different solubility. In fact, the polymers used in the experiment were not identical.

Respectfully submitted,



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Dated: 22 February 2001